

FTI Lessons Learned

Prepared for: FTI-2 ACT-IAC
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Introduction

- **The following slides contain lessons learned identified relative to the planning and execution of the FAA Telecommunications Infrastructure (FTI) contract**
- **At the time of its award, the FTI contract represented a transformation for the FAA telecommunications enterprise in terms of...**
 - Acquisition approach, CONOPs, performance incentives, etc.
- **The lessons learned are not necessarily all-inclusive – the information in this presentation focuses on:**
 - Acquisition / Program Management
 - Transition and Operations

Acquisition / Program Mgmt (1 of 2)

- **Cost Recovery**

- The FTI CLIN structure for telecomm services is complex and difficult to administer
 - Note: Support services (e.g., Program Management, Network Engineering, etc.) are priced separately from telecomm services
 - For telecomm services, there are various CLINs, some of which are location-specific and others that are functional abstractions
 - Approach has resulted in millions of CLINs

- **Service Level Agreements (SLAs)**

- FTI has two main categories:
 - SLAs that apply to the performance of individual services and SLAs that apply to enterprise-wide failures
- When it comes to the restoration of individual services, SLAs haven't influenced behavior to restore FTI services within contractual limits
 - Possibly because they are viewed as beyond the contractor's control
- The enterprise-wide SLAs have proved to be an effective incentive for the contractor to design and implement additional security and resiliency into the network

Acquisition / Program Mgmt (2 of 2)

- **Performance Award Fee (PAF)**

- PAF has had a greater impact on behavior than the Service Level Agreement (SLA) credits
- FAA has effectively used PAF to allocate fee in the highest priority areas as they changed over time

- **Price Management Mechanism (PMM)**

- FTI contract has a PMM clause that stipulates telecomm prices should be periodically revisited to ensure that they are at least as good or better than offered on other telecomm contracts comparable to FTI
- PMM was less effective than anticipated:
 - Very few contract comparables exist to FTI both in the nature of the services and the unique pricing structure
- PMM clause was replaced with a Cost Saving Sharing clause that provides incentives to drive down telco costs
 - FTI vendor can share in “savings” relative to contract revenue

Transition (1 of 4)

- **Service Inventory**

- The FAA encountered difficulties with identifying the existing inventory of services that were candidates to be transitioned to FTI
- Exacerbated by the consolidation of services on 9 different networks
- Poor or non-existent inventory information impacted site designs and often resulted in re-work, site go-backs, and increased costs

- **Site Surveys**

- Original FTI planning and budget projections did not call for surveys at every site
 - Expectation was that there would be a high degree of commonality among site types
 - In reality, there was significant variation
- Conducting more site surveys can cut down on surprises

Transition (2 of 4)

- **Configuration Management (CM)**

- There was a lack of CM and standardization at some FAA sites
 - FTI requirements led the FTI vendor to believe that there were only 37 distinct site designs required for the whole NAS
 - In reality, there are hundreds of unique site designs
 - Sometimes FAA operations personnel customize facilities

- **Interconnection with Legacy Networks**

- The transition to FTI of IP traffic was simplified because...
 - In the NAS Operational Domain, the legacy IP network was FAA-owned and so the FAA did not have to depend on coordination between vendors
 - In the Mission Support Domain, the FTI vendor established a teaming relationship with the FAA's legacy provider to ensure a smooth transition
- However, the transition of IP networks still represented the greatest risk of broad system failures when migrating from the legacy networks to FTI

Transition (3 of 4)

- **Tools**

- During transition, the FAA recognized the need for better tools to assist in the management of service cutovers
- Since it was an unplanned requirement, it had to be developed “on the fly”
- The FAA needs to consider what tools it needs to have in place before the start of the FTI-2 transition

- **Emerging Requirements (= Requirements for new services)**

- During the transition to FTI, there were hundreds of planned and unplanned emerging requirements that had to be implemented in parallel with the transition of existing services
 - Often very high priority to support program schedules
- Emerging requirements and transition requirements compete for limited resources
- A more cogent strategy for dealing with emerging requirements will be needed during the FTI-2 transition

Transition (4 of 4)

- **Resource Planning and Uncertainty of Telco Delivery**
 - During the peak of the FTI transition, telco access bandwidth was being delivered to 150-200 sites per month
 - It was difficult for the FAA to plan its resources (e.g., site escorts) with certainty because telco carriers often slipped the delivery dates at the last minute
 - The FAA needs to work with its FTI-2 service provider(s) to develop a more predictable and reliable process
- **Parallel Operations Costs**
 - The FAA encountered significant parallel operations costs as it transitioned from its legacy networks to FTI-2
 - The FAA had to re-prioritize its transition approach and schedule to minimize parallel ops costs

Operations (1 of 3)

- **FAA Restoration Time Requirements**

- The FAA has a 3-hour restoration time requirement for standard availability services and jeopardy conditions for high availability services
- This requirement was a significant driver in terms of the FTI vendor decision-making relative to:
 - The number and positioning of field personnel,
 - Where and how to pre-deploy spares, what kinds of tools and equipment technicians carried with them, and
 - Where to invest in process improvements and automation.
- The FAA's restoration requirements may be more stringent than the prevailing tariffs
- So despite the FTI vendor best efforts, the FAA's restoration requirements are difficult to meet when a telco carrier's technician must be dispatched

Operations (2 of 3)

- **RMA Levels**

- The FAA defined 6 different RMA levels to provide FTI offerors with the flexibility to match price to performance at a more granular level
- In reality, it yielded limited benefit to the FAA because there are only two basic price points primarily driven by the need for the service provider to implement diversity and automatic protection switching to meet restoration requirements

- **Campus Environments and Military Bases**

- “Campus environments” are locations where there is a centralized demarc for commercial telco and the individual services have to be extended to multiple locations on “the campus”
- Many military bases also fit the definition of campus environments, but they present an additional degree of complexity due to the 3rd-party coordination required
- Campus environments are challenging from an operational perspective because trouble-shooting is more difficult when multiple parties are involved

Operations (3 of 3)

- **Maintenance Releases (MRs)**

- The FTI SIR did not provide a clear description of the requirements levied on the service provider with respect to the FAA's "Maintenance Release" process
- Required development of automated tools and assignment of additional personnel resources that were not foreseen at the time of proposal submission